1: Underhill E-5 (1931-1935)1946 NU28 Papago NU28

224 food nor water. They were sure of getting meat of some kind. They [172] would drink the blood, and, in any case, they prided themselves on being *skutsk* (able to endure thirst). Those who would don the disguise wore sleeveless shirts of deerskin whitened in front to imitate the deer's belly, black behind, like his back. They carried white clay with which at the last minute they would dapple their brown legs and arms. At the same time, they would assume the disguise and then emerge from behind some shelter to walk toward the deer on all fours.

As men gathered at the rendezvous, they moved quietly and spoke in low tones so as not to offend the deer. Some even maintained complete silence. If anyone felt that he or his weapons had been exposed to contact with a menstruating woman, the shaman performed some part of the ceremony for driving away evil, to be described later. This applied only to fathers or brothers who had run the risk unconsciously. The husband of a menstruant or a pregnant woman was required to stay at home, on pain of being wounded in the hunt or causing illness to his child.

224 789 Those who had hunting fetishes, exposed them. Such a fetish was usually a "blue stone" or a "white stone" whose whereabouts had been suggested by an animal visitant in a vision. Those who had had no vision sometimes owned a less reputable form of magic, though they would not confess it. This came from the lichen called "earth flowers," which grew on rocks in inaccessible places. Men climbed to get it, and, after asking its permission, rubbed off a little [183] with a rock and wore it in the folds of the breech clout. It attracted both deer and women, and its odor on a man's sweaty hands in the drinking dance would bring any woman to him, they said. But it was dangerous, and a man who used it too long would ultimately sicken and die. No man ever admitted possessing it, and the few whom the writer knew to be suspected of owning it were regarded with fear.[2]

Such private magic was always subsidiary to the singing of songs to summon the deer. For this the men arranged themselves in a

[2] The writer finally obtained a small amount of earth flowers in a buckskin bag, but it was too dry and powdered for identification. It may be the same growth which she scraped off a rock in Mohave country and which has not yet been analyzed. The Mohave shaman who lent his pocket knife for the process (while turning his back) professed to be ill for some days afterward.

1: Underhill E-5 (1931-1935)1946 NU28 Papago NU28

In the southern part of the reservation the dance lasted four nights(29); in the northern part, a whole month. It was given wherever the family happened to be, either in camp or in a permanent village. "We used to have good times in cactus camp," one informant said, "because somebody would be sure to reach puberty, and then we would dance all the time."(26)

The length of the time of dancing depended on the wealth of the girl's parents, since they must give a meal to the dancers every night. Poor people might omit the dance entirely, trusting to purification by the shaman to relieve the girl from danger. People who were well supplied sent word to neighboring villages and camps as soon as the girl's four-day seclusion was over, and crowds arrived every night to join in the gaiety.

There were several men in any village who knew the appropriate songs. These they might have dreamed during some period of purification, or they might have learned them from others. The position of song leader for this dance was a popular one, since the leader danced next to the maiden. He and other men dancers received no pay except a meal at midnight. Their enjoyment of the dance came from the license permitted. The young girl dancers received gifts from the maiden, "because they stayed up all night with her." If the dance lasted a month, she generally, when it ended, had disposed of all her clothes and ornaments except what she wore.

In this dance men and women stood side by side in two lines which faced each other. They placed their arms over each other's shoulders and pulled their blankets across in front of them to make an unbroken covering for the whole line. This was the only dance where such close contact was permitted.

At the end of one line danced the song leader, with the maiden at his left and the rattle in his right hand. His wife danced opposite. The lines walked back and forth toward each other singing, for there was no choir on this occasion. After each four songs they rested, though the girl herself was not supposed to sit down. Her family provided a nonintoxicating drink of cactus juice or some brew of berries and fruit. For the meal at midnight they might kill a deer or provide a stew of rabbits, beans, and corn.

If the dance lasted a month, more than one song leader had to

6: Densmore E-5 (1920)1929 NU28 Papago NU28

they were predicted. He said, "At that time men wore nothing but the G string. They rose before daylight and went out to look for Apache. See! If young men do this now they get sick and can stand nothing; they take cold and die.")

Preparations for the saguaro festival began in June when the fruit of the saguaro cactus was gathered. The fruit grows at the top of the cactus, which is a column 20 to 40 feet in height. The implement used in gathering the fruit is a long pole with a hook at the end. Much importance is attached to the shape of the hook, and the group of stars known as the Big Dipper is called the Cactus Hook because of a fancied resemblance. The work of gathering the fruit and making the sirup was done in places called cactus camps, several families combining in the work. The equipment of such a camp consisted of a thatch in a tree, on which the cactus fruit was spread to dry, and a covered fireplace. A few ollas were usually left in the camp and were not disturbed by travelers. A deserted camp south of Santa Rosa was visited and photographed. (Pl. 19, *a*, *b*.)

The cactus fruit was boiled in water, strained through a mat of grass or branches to remove seeds, etc., the juice was then boiled down to a sirup and placed in ollas, and sealed with a bit of broken pottery covered with mud. At the time of the ceremony these ollas were opened and the sirup mixed with water and allowed to ferment, making "tiswin." Smaller ollas were also filled for household use, as the sirup mixed with water and not fermented is a pleasing drink in hot weather. The sirup might be either light or heavy and could be kept for a year. If kept for a long time the color became dark. A similar drink was made from the fruit of the "organ-pipe" cactus.

The following incident was related concerning one of these camps. It was said that while the older people were busy with their work seven children strayed away from the camp and were lost. Their parents searched for them several days but could not find them. In the camp there was a man whose dreams usually came true. When the parents could not find the children they went to him. One night he "dreamed a song" and the next morning he saddled a pony and went to a place called Vitnikût. When he got to the place he found footprints of children and followed them all over the mountain. Finally he saw a boy in the bushes. He got down, tied his horse, and went toward the boy. When the boy saw the man coming he ran farther into the bushes, told the other children and they all ran away. The man chased and finally caught them and brought them home. They had been lost for eight days and would have perished without water.

The song heard by the medicine man in his dream told him that the children had not died of thirst. It had rained where they were and the water had stayed in a little "water hole." The children had

17:Castetter & Underhill N.E-5 (1931-1934) 1935
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Another occasional food, or more accurately a drink, is the pulp of the *viznaga*, barrel or niggerhead cactus *(Echinocactus wislizeni)*. If one becomes thirsty on a journey he cuts the top off a plant with a sharp stone, pounds the pulp and scoops out the juice with the half gourd *(Lagenaria vulgaris)* which he carries as a drinking and eating vessel.

According to Thackery and Leding (25), the fruits of the viznaga are cut up and cooked with cornmeal or other material, the seeds being discarded.

Root, Tuber, and Bulk Crops

Sand-root, *caa't (Ammobroma sonorae)* October
Wild potato, *taiaroti*. A climbing species of *Solanum*. Summer
***mo'otari (Franseria tenuifolia)* Summer**
Wild onion, *sipuia* (Span.) *(Allium unifolium)* May
Papago Blue Bells, Covena, *ha'at (Brodiaea capitata* var. *pauciflora)* April
Night-blooming cereus, *ho'o'k iva (Cereus greggii)*

The staple root crops are the sand-root *(Ammobroma sonorae)* and the root of *Franseria tenuifolia*, both of which appear on the flood plains near the villages after the rains. Whole families go out with digging sticks usually in October to gather the roots of these species, and live upon them while they last. Any surplus is sun-dried on the house-roofs and stored in jars.

The sand-root has been used from time immemorial by the Papago and is parasitic upon the roots of the small desert shrubs *Coldenia plicata* and *C. Palmeri*, as well as on *Eriogonum deserticolum*. It is to be found in parts of the Southwest where the average rainfall is between only two and five inches, and is eagerly sought by the Papagos, who consider it a most excellent food; it is eaten either raw or roasted (6, 17, 24).

Palmer (20) records that these people dried and ground the stems of the sand-root with mesquite beans *(Prosopis*

17:Castetter & Underhill N.E-5 (1931-1934) 1935
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252 *velutina)* to make a pinole,[1] and discusses its general use and preparation, while Havard (14) also refers to its use by the Papago.

222 Similarly the tubers of the climbing potato (a species of *Solanum*) and the roots of the wild onion *(Allium unifolium)* which grow only on Mt. Baboquivari, were collected in May and mid-summer, respectively. These two plants [438] were brought back by hunters, or by individuals who made the long special journey to obtain them to trade for baskets, skins or pottery. The bulbs of Papago Blue Bells are eaten raw. They do not have a pleasing taste and are eaten largely because they appear in early spring, before other crops are ready.

[271] 252 The large root of the night-blooming Cereus *(Cereus greggii)* which may weigh as much as four pounds is chewed raw for thirst or may be baked whole in ashes, peeled and eaten.

Fruits[2]

222 Small fruits:
262 *u:spa't (Condolis spathulata)* Summer
Mulberry, *kohi (Morus microphylla)* Summer
Hackberry, *kom (Celtis reticulata)* Summer
Boxthorn, *kuawur (Lycium fremontii)* August
Mistletoe, *hakowa't (Phoradendron californicum)* Summer
Lote bush, *u:s teui'tpa't (Zizyphus lycioides)* Summer
Bird Cayenne pepper, *teirtipin (Capsicum frutescens* var. *baccatum)* August
Black oak, *toa (Quercus emoryi,* also *Quercus oblongifolia)* July
Bucknut, coffee berry, quinine plant, *hohwi (Simmondsia californica)* August

Cactus and Yucca fruits:

Giant cactus, sahuaro, *ha:canyi (Carnegia gigantea)* July
Organ pipe cactus, pitahaya, *teutcuis (Lemaireocereus thurberi)* August

[272]

1. The Papagos mean, by pinole, a gruel made of parched, ground cornmeal and water. Since the meal has been parched before the water is added, no cooking is necessary. Pinole was the only ration used on journeys, since it served both for food and drink. It was also the prescribed food during ceremonial purification.

2. The term fruit is here used in the botanical sense and thus covers berries, nuts, etc

17:Castetter & Underhill N.E-5 (1931-1934) 1935
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embers and shaken constantly to prevent burning. Or they are placed on a piece of broken pottery jar directly over the coals and the seeds stirred with a stick; after parching they are spread on the house roof for thorough dehydration before being stored.

Mesquite beans *(Prosopis velutina)* ripen in August near the summer villages and formerly constituted an important crop. The pod, which was much prized, has a sweetish taste and could be eaten fresh.

These beans could be either ground up like other seeds as flour, or the bean and pod could be pounded into a pulpy mass in a mortar, since they were too sticky for the metate. The resulting pulp was boiled. Beans were dried in the pod if they were picked near home, as the bulk was not too much to carry. In that event they were spread on the house roof and turned until thoroughly dried, then put away in a jar. If bulk needed to be reduced the sun-dried pods were flailed to beat out the seeds, the whole then winnowed in a basket and the seeds parched and stored.

The other legumes, ironwood *(Olneya tesota)* and palo verde *(Parkinsonia microphylla* and *P. aculeata)* produce beans which were flailed, winnowed, and parched in the same way as that described for mesquite.[4] The seeds of the devil's claw *(Martynia fragrans)* are also boiled and eaten.

2. BEVERAGES

Sahuaro, giant cactus, *ha:canyi (Carnegia gigantea)* juice fermented
Pitahaya, organ pipe cactus, *teutcuis (Lemaireocereus thurberi)* juice fermented
Prickly pear cactus, *nohwi (Opuntia engelmannii)* ___juice fermented
Lote bush, *u:s teui'tpa't (Zizyphus lycioides)* _____juice fermented
Jimson weed, thorn apple, *kotata'p (Datura meteloides)* root ground and infused
Tansy mustard, *cu'uwa't (Sophia pinnata)*_____made into tea
Sage *(Salvia columbaria)* _____made into tea
Broomweed *(Baccharis sarothroides)* _____made into tea
Joint Fir *(Ephedra nevadensis)* _____made into tea

4. The chemical composition of the beans of *Parkinsonia aculeata* has been investigated by Robert A. Greene, Bot. Gaz. 94:411-415, 1932. He has found the composition of the whole bean to be similar to that of alfalfa hay or mesquite beans.

17:Castetter & Underhill N, E-5 (1931-1934) 1935
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informants insisted that a decoction of the root was drunk only occasionally by private individuals among the Papagos. 276

Peyote *(Lophophora williamsii* or *Lophophora lewinii)* appears not to have been known by the Papagos unless it be one of the unidentified roots, rumored vaguely as powerful magic, that come from Mexico. It seems to have little importance for any of the desert area. Hrdlička (15), however, records that the Papagos and Pimas did use peyote slightly.

Tea-like drinks for refreshment were made by steeping the seeds of tansy mustard *(Sophia pinnata)*, a sage *(Salvia columbaria)*, broomweed *(Baccharis sarothroides)*, and joint fir *(Ephedra nevadensis)*. 272

3. SMOKING 276

coyote tobacco, *wiupuri (Nicotiana trigonophylla)* leaf dried and smoked
a lichen, *tcewi'ṭ hiosi'k*

Tobacco *(Nicotiana tabacum)* was regularly cultivated but wild tobacco *(Nicotiana trigonophylla)* grew on Elder Brother's mountain. Those who could do so made the expedition to secure it for trade. It was dried, then smoked in a tube made of a section of carrizo *(Phragmites communis)* stem about six inches long, or when carrizo could not be obtained the tobacco was wrapped in the inner white husk of an ear of corn. [438]

The lichen referred to, known as "earth flowers," also grows on Elder Brother's mountain. The informants referred to it as a yellow growth on the north side of rocks which had to be scraped off with a knife. The only specimen procured was not in a condition to make determination possible. This lichen, apart from its magical uses, was dried and mixed with tobacco for smoking; it had a dizzying effect, and an odor that could be noticed from a distance. This may be the *pihol* flowers referred to by Densmore (9).

FOOD PREPARATION

The Papago diet consisted ordinarily of dried foods: 262
cereals, dehydrated vegetables, and sun-dried meat. Fresh foods were available for only short periods, when they were consumed in quantity.

The year round staple was flour, made from corn; the 252
beans of mesquite *(Prosopis velutina)*, ironwood *(Olneya tesota)*, or palo verde *(Parkinsonia microphylla)*; pumpkin seeds *(Cucurbita pepo)*, dried yucca fruits *(Yucca* sp.*)*, sahuaro *(Carnegia gigantea)* and various other wild seeds. The technique with all these except the sticky mesquite was to parch, sun-dry, and store in sealed jars. The parching was done at the time of gathering and was really part of the storage technique to prevent mildew, although the seeds were not ground into flour until just before they were used. The mesquite beans, too sticky for a metate, were pounded in a mortar made either of stone or wood (a mesquite log hollowed with a stone axe). Women who went to gather the fruit of the Spanish Bayonet *(Yucca elata)* often pounded it to a pulp in hollows of the rocks.

Flour was used most often in the form of a gruel. 272
There were two kinds: *waka*, the Mexican pinole, which served warriors and people on journeys with both food and drink, was made by simply mixing parched corn flour with water. *Ator*, the gruel served at home on non-ceremonial occasions, was made by boiling the flour with water and salt. The pot in which it was cooked was rarely empty, and for a meal a little more flour of any kind was added, and the whole cooked. Thus all sorts of combinations were possible, the favorite being cornmeal with sahuaro seed flour *(Carnegia gigantea)*, which was slightly oily and sweet.

Mesquite flour, unlike other flours, was made at the 252
time the beans were harvested. The housewife ground parched seeds and made the flour into a compact cake. This was sprinkled frequently with water for several days until

3: Whited G-5 (1890) 1894 NT15 River Yumans
Papago NU28

241 GRAIN.—The roving Papagos, those living off the reservation, raise only grain enough, principally wheat and corn, for their own use. Squashes, melons, and sugar cane make up the list of their common crops. Cultivation with them consists in scratching the ground with their stick plows and planting the seed. They pay no attention whatever to weeds. They inclose small fields of fertile ground in the mesas with brush fences and then plant after a rain of the right season. If it rains in November, they plant wheat. Rain in December will insure a good growth of straw, but rain in February will be necessary to mature the berry. The failure of rain in any of the 3 months will prevent planting or about ruin the crop which has been started. Owing to the uncertainty of propitious rains they obtain crops, apart from irrigation, only about once in 6 years.

Their wheat is white, a short, plump berry, of remarkably good quality. In the off years they resort to the reservation, raise a little grain, and "peck" it to their villages. Corn, squashes, sugar cane, and melons are raised after the summer rains.

252 412 They grind grain on an inclined stone, called a metáte, using a smaller stone, about the size of a brick, called a mano, as the crushing power. A handful of whole grain is placed at the top of the metáte, a part of it is scattered over the surface of the stone with a dexterous flirt of the hand, and it is then powdered by two or three energetic rubs with the small stone. The whole process resembles that of washing clothes with a washboard. The flour is caught in a bowl as it falls from the metáte, is clean and free from grit, and contains all the nutriment of the grain.

272 252 [334] Parched wheat, when ground in this manner, is mixed with water, forming a palatable drink, called penole. Corn is never ground raw, but after it has been boiled, and the meal is pressed and rolled up in soft corn husks and forms their bread for journeys. It is superior in taste, in my judgment, to any kind of corn bread made by the whites. They manufacture a kind of cheese from milk, but have no process for butter making.

231 STOCK.—The Papagos have small herds of stock and droves of horses. These constitute their substance, but each possessions can not be large in view of the uncertainty of water. Nearly every family has a few fowls. Their wants are few, and these are easily satisfied. They are self-supporting, and no charge on the government for either food or clothing.

493 An occasional farm wagon was found in a village, but in Ki-ki-wah there were 4. This village is about 90 miles from Tucson and 10 from the Mexican line.

224 [439] GAME.—Various species of deer abound, and in season the markets of the whites are supplied with venison by the Indians. Mountain sheep and goats are also brought in by them, but in less numbers than deer. Black and cinnamon bears are occasionally killed. The cotton-tail rabbit abounds, and is in demand for the table. The flesh is white, and fully equal to chicken in delicacy of flavor. Dangerous wild animals are also killed by the Indians in considerable numbers. The most formidable of these is the mountain lion. This animal destroys young stock, and is therefore hunted with zeal by the Papagos. The pelts possess a trifling value. The wildcat and civet cat are very numerous. The coyote, fox, jack rabbit, and skunk make up a group of animals which are pests, though not dangerous ones. The jack rabbit is sometimes used for food.

223 BIRDS.—Among the birds useful to Indians are the quail, dove, mocking bird, and cardinal bird. These are trapped with great success by them, the quail and dove for food, the others for household pets, their sale forming quite an income. Hawks, owls, and crows abound. Wild ducks, geese, bittern, heron, and snipe are killed in their migration back and forth between Mexico and California. It will be seen that the Indians have many food resources on wing and foot, valuable for consumption or sale.

342 333 DWELLINGS.—No tents are used among the Papagos, and about two-thirds of the houses are made of adobe, the rest being constructed of mud and brush. They consist of but one room, and have dirt roofs laid on rafters of small trees. There is no uniformity as to the size of the houses. The adobe bricks are made in an open frame of four compartments from a gray mud or clay mixed with short cut straw or hay. This mold is placed upon the ground, filled with the soft adobe, packed firmly, and then the frame or mold is removed and the brick left to dry. The usual size of a brick is 4 by 9 by 18 inches.

[356] The Papagos are cleanly in their habits. They sweep the dirt floors of their houses, and in some cases the ground around them. No vermin of any kind was found in any of their houses.

291 [177] CLOTHING.—The men wear boots or shoes, pants and shirts, and straw or felt hats. A canvas jacket is worn on cool days or on a journey. The women wear shoes, stockings, and skirt, and waist blankets are quite common with both sexes, with the women serving as shawl and head covering. The women sew nicely by hand, using thimbles. They also use sewing machines, of which there were three in Ki-ki-wah.

181 [548] [595] MORALS.—The men were generally represented to me to be truthful and honest and the women to be virtuous. Prostitution is said to be unknown among them. This may be due to the fact, as some claim, that wives are taken and abandoned at will. Occasionally a man was found with 2 wives.

Their honesty was tested in various ways on our trip. The outfit of 2 wagons was left unguarded for a whole day when we made the trip from Tecolote to Fresnal and neighboring villages, and not a thing was disturbed. Twice after we left villages forgotten articles were brought to us by men on horseback. These articles would not have been missed, and might have been kept by them with perfect impunity. The Papagos are not addicted to

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